

~~W. J. [Signature]~~  
**\*83285\***

**Work Order ID 83285**

April-16-12 2:29:03 PM

Item ID: D350-748-241TRN

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Crosstube Turning Detail

Stop **\*NS2\***

Start Date: 16/04/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/04/16 Tooling:

Run Start **\*NR1\***

QC: Date: SPC (Y/N):

Date:

Stop **\*NR2\***

Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
----------	--------------

D350-748-241	F
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100

0.00

**\*100\***

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs on both ends as per Folio FA647

2-Turn first side as per Folio FA647

3-File transition lines smooth.

FOLIO REV: \_\_\_\_\_

DWG REV: \_\_\_\_\_

1 ~~Ø~~

MM.L  
12/04/22

110

QC1- Inspect dimensions to dimension sheet

0.00

**\*110\***

QC

Memo

0.00

Quality Control

1 ~~Ø~~

MM.L  
12/04/22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 83285****\*83285\***

Page 2

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Item ID: D350-748-241TRN

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Revision ID:

Item Name: Crosstube Turning Detail

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Start Date: 16/04/2012 Start Qty: 1.00

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Required Date: 30/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

120

0.00

**\*120\***

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA647  
2- File transition lines smooth.  
3-Scribe part # as per Dwg D350-748-241  
FOLIO REV: \_\_\_\_\_  
DWG REV: \_\_\_\_\_

1 0

mm.l  
12/04/22

130

QC1- Inspect dimensions to dimension sheet

0.00

**\*130\***

QC

Memo

0.00

Quality Control

1 0

★ SEE ATTACHED

RTO

mm.l  
12/04/22

140

QC8- Inspect parts - second check

0.00

**\*140\***

QC

Memo

0.00

Quality Control

NP 12-5-3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

W/O: 83285		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-748-241 TRN PAR #:            Fault Category: X- Lube NCR: Yes No    DQA: OK Date: 12/06/28  
 Resolution:            Disposition: Use as is Re-work QA: N/C Closed OK Date: 12/7/5

NCR: 12-1548		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12.05.02	100	Cuff machined to Ø 2.140 along 0.080° long area at end of cuff	CP 12.05.02 ØS1042	Acceptable. GRIND SMOOTH	TH 12-05-02	S 17/05/02	CP 12.05.02 ØS1042	S 17/05/02
		Small step at end of cuff from Ras tool. R.C. offset on tool						

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Work Order ID 83285

**\*83285\***

Page 4

April-16-12 2:29:03 PM

Item ID: D350-748-241TRN

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Crosstube Turning Detail

Stop **\*NS2\***

Start Date: 16/04/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC6- Inspect dimensions to drawing	0.00							
<b>*180*</b>									
QC	Memo	0.00							
Quality Control									
190	Packaging	0.00							
<b>*190*</b>									
Packaging	Memo	0.00							
Packaging	Identify and stock in kanban rack Location: <u>46</u>								
200	QC21- Final Inspection - Work Order Release	0.00							
<b>*200*</b>									
QC	Memo	0.00							
Quality Control									

*RP 73809 SP*

*[Signature]*

*12-6-7*

*12/6/26*

*MF 12-06-25*



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April-16-12 2:29:06 PM

Page 1

Work Order ID: 83285

\*83285\*

Parent Item: D350-748-241TRN

\*D350-748-241TRN\*

Parent Item Name: Crosstube Turning Detail

Start Date: 16/04/2012

Required Date: 30/04/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 08-03-06 DD verified by:ec  
 IPP Rev B Removed polish 08.04.02 EC verified by: DD  
 IPP Rev C Removed LPS-3 08.06.23 Ec verified by: DD IPP Rev D  
 11.02.24 as per dwg rev.F DD verf: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6015-125		Manufactured	No			120	Each	44.0000	1	1			

\*D6015-125\*

Crosstube Material

\*\*

Location	Loc Qty	Loc Code
HALL	44	
61380	4	
72511	40	

32913

1

KC 12-4-20

use D6018-125

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	83285
<b>Description:</b> Crosstube Assembly (AS350/355 High Aft)		<b>Part Number:</b>	D350-748-241
<b>Inspection Dwg:</b> D350-748-241 <b>Rev:</b> F		<b>Page 1 of 1</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.241	/	vern	CWC-08
	2.180	+0.005/-0.000	2.185	/		
	2.180	+0.005/-0.000	2.185	/		
	2.208	+0.005/-0.000	2.213	/		
	2.234	+0.005/-0.000	2.238	/		
	2.253	+0.005/-0.000	2.255	/		
	2.272	+0.005/-0.000	2.277	/		
	2.299	+0.005/-0.000	2.299	/		
	0.063	+/-0.010	.063	/	vern	CWC-08
	4.26	+/-0.030	4.26	/	"	
	R0.063	+/-0.010	.063	/	RG	
	R0.50	+/-0.030	.500	/	"	
SIDE B	2.240	+0.005/-0.000	2.240	/	vern	CWC-08
	2.180	+0.005/-0.000	2.184	/		
	2.180	+0.005/-0.000	2.182	/		
	2.208	+0.005/-0.000	2.210	/		
	2.234	+0.005/-0.000	2.234	/		
	2.253	+0.005/-0.000	2.253	/		
	2.272	+0.005/-0.000	2.277	/		
	2.299	+0.005/-0.000	2.299	/		
	0.063	+/-0.010	.063	/	vern	CWC-08
	4.26	+/-0.030	4.26	/	"	
	R0.063	+/-0.010	.063	/	RG	
	R0.50	+/-0.030	.500	/	"	
	122.70	+/-0.060	122.70	/	tape	MAN-L-02

<b>Measured by:</b> G.M.L.	<b>Audited by:</b> DP	<b>Preliminary Approval:</b>
<b>Date:</b> 12/04/21	<b>Date:</b> 12-5-23	<b>Date:</b>

Rev	Date	Change	Revised by	Approved
A	07.01.17	New Issue (P/O D350-748-201)	KJ/JLM	
B	12.02.02	Dwg Rev updated	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty -241	Part Number	Description
1	X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
2	1	D6015-125	CROSSTUBE (OR D6018-125)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

# **GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6018-125  
FINISHED LENGTH = 122.700±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2  
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-241" AND BATCH NUMBER ON INSIDE OF CUFF  
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 29.85 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT ALL EDGES FROM MACHINING  
LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER  
BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO  
BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO  
VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE,  
CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE  
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,  
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.  
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE  
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO  
CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT  
NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN  
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. 83285 MLO  
12/04/16

RELEASED  
2011-01-08  
AM

F	ADD HRC TEST OPTION (88-1) PER PAR 08-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES: UPDATE TO CURRENT STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A8-3); ADD TOLERANCES (ZN C6-3, D2-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6018-125 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	DP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	DP		
CHECKED	DP	DRAWING NO.	REV. F
MFG. APPR.	DP	D350-748-241	SHEET 1 OF 4
APPROVED	DP	TITLE	SCALE
DE APPR.	DP	CROSSTUBE (AS 350/355 HI AFT)	NTS
DATE	10.11.23	<small>COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

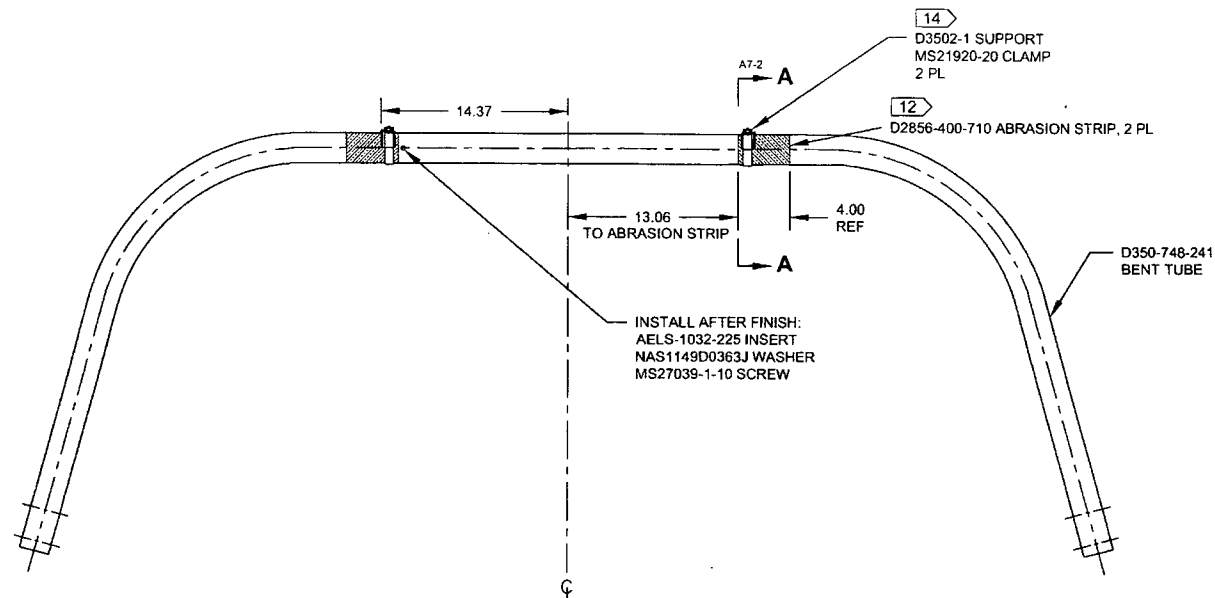
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

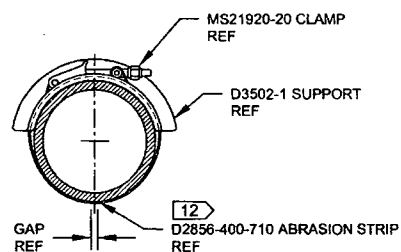
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**NOTE:** Date & initial all entries

83285



**D350-748-241  
ASSEMBLY DETAIL**



**SECTION A-A**  
D4-2  
SCALE 4X

**RELEASED**  
2011-02-19  
JMP

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN	GP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	B	DRAWING NO.	REV. F
MFG. APPR.	E	D350-748-241	SHEET 2 OF 4
APPROVED	JH	TITLE	SCALE
DE APPR.	JH	CROSSTUBE (AS 350/355 HI AFT)	NTS
DATE	10.11.23	<small>COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	



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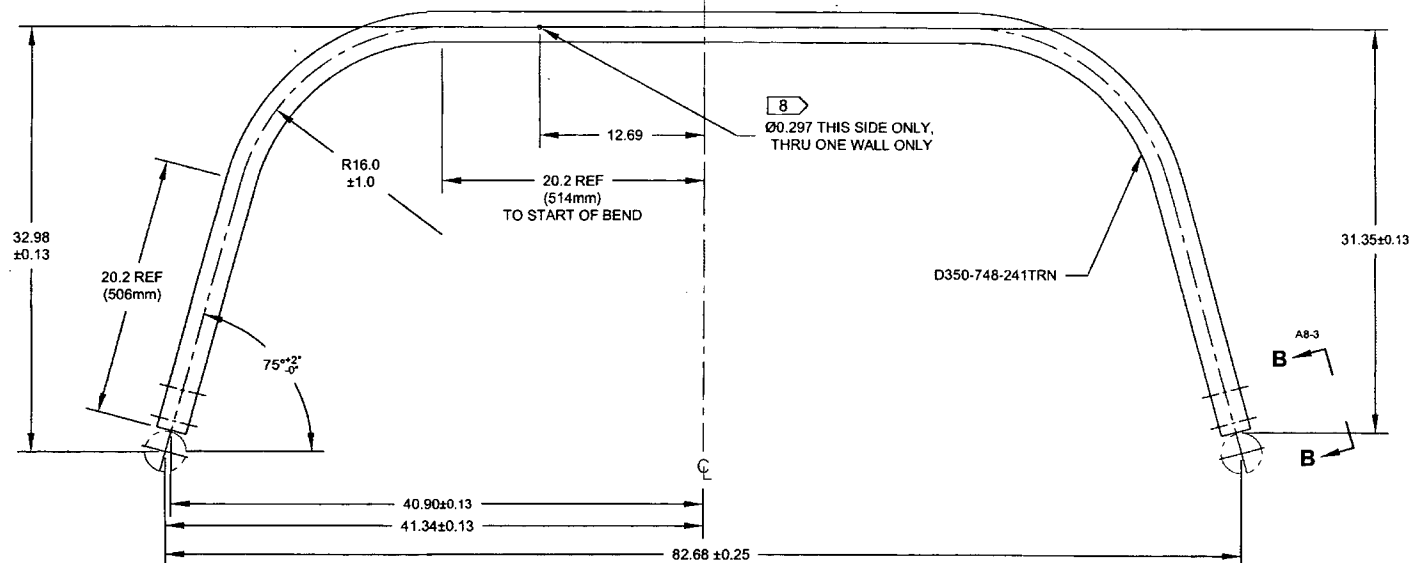
8 7 6 5 4 3 2 1

D

C

B

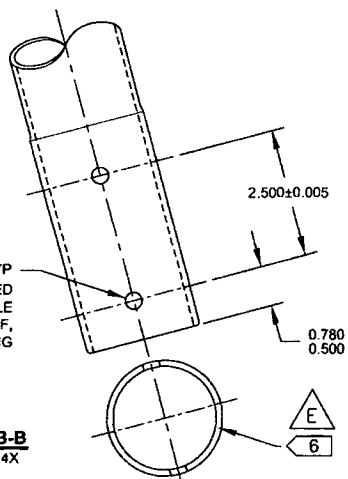
A



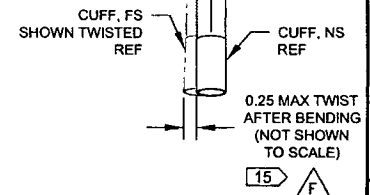
**D350-748-241**  
**BENDING AND DRILLING DETAIL** 10

Ø0.323<sup>+0.005</sup><sub>-0.000</sub> THRU, TYP  
HOLE TO BE ALIGNED  
WITHIN ±0.001 OF HOLE  
ON OTHER SIDE OF CUFF,  
TO BE DRILLED AFTER BENDING

C2-3 **VIEW B-B**  
SCALE 4X



0.323



**RELEASED**  
2011-01-18

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D350-748-241	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI AFT)	NTS
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8 7 6 5 4 3 2 1

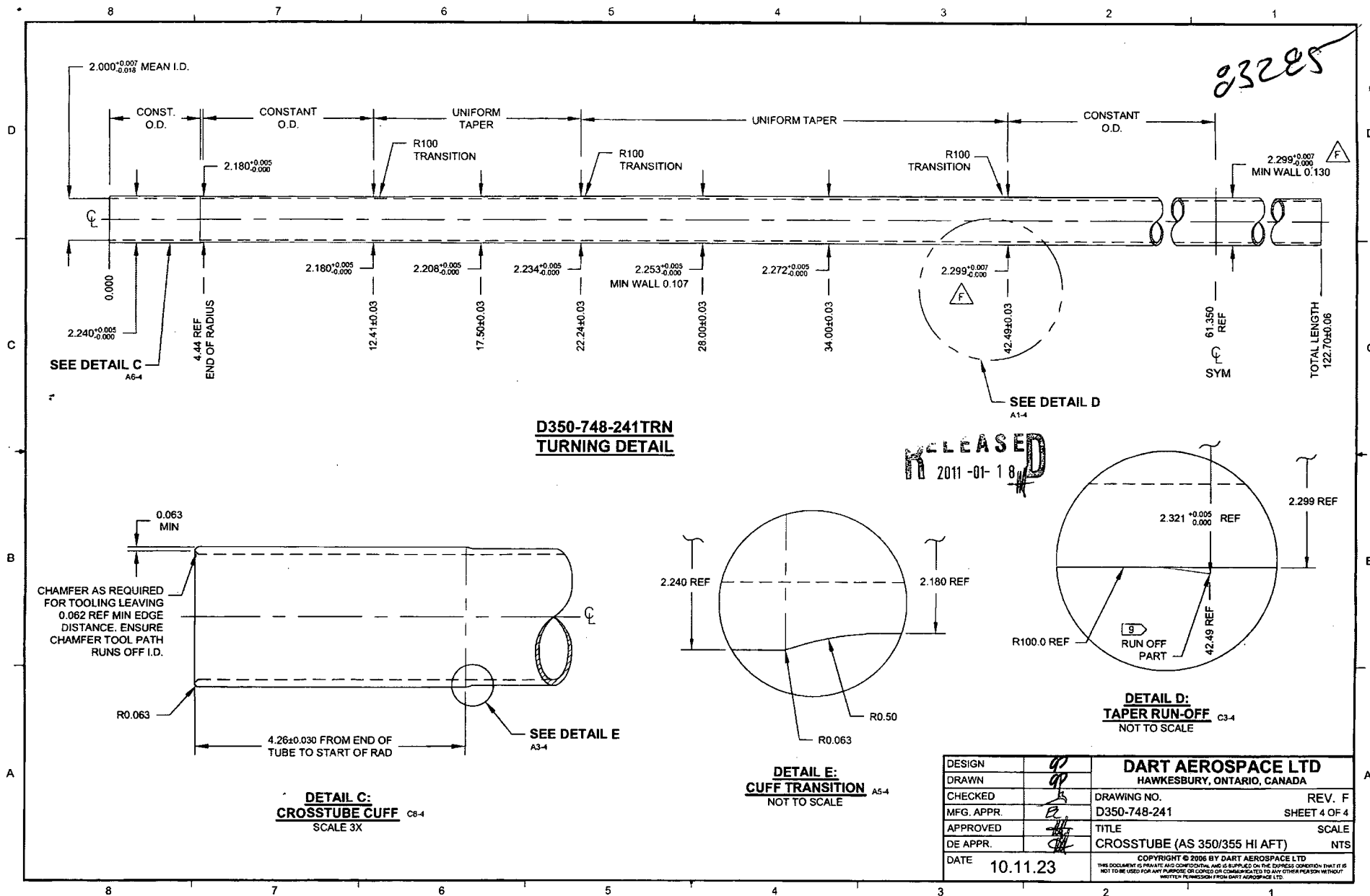
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

## Linda Lacelle

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**From:** David Shepherd <dshepherd@dartaero.com>  
**Sent:** March-08-12 11:58 PM  
**To:** 'Linda Lacelle'; 'Provencal, Chris'  
**Cc:** 'Pat Smith'; 'Bill Beckett'; 'Mike Petsche'  
**Subject:** RE: 350 crosstube extrusion

Linda,

Not sure if you heard back from anyone on this, but this makes sense to me.

David

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**From:** Linda Lacelle [<mailto:llacelle@dartaero.com>]  
**Sent:** March-07-12 7:11 AM  
**To:** [dshepherd@dartaero.com](mailto:dshepherd@dartaero.com); Provencal, Chris  
**Cc:** Pat Smith; Bill Beckett; 'Mike Petsche'  
**Subject:** RE: 350 crosstube extrusion

So just to confirm, we can use the old D6018-125's for the afts to deplete this stock?

Thx  
Linda

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**From:** Linda Lacelle [<mailto:llacelle@dartaero.com>]  
**Sent:** March-06-12 10:19 AM  
**To:** [dshepherd@dartaero.com](mailto:dshepherd@dartaero.com); Bill Beckett ([bbeckett@dartaero.com](mailto:bbeckett@dartaero.com)); 'Mike Petsche' ([mpetsche@dartaero.com](mailto:mpetsche@dartaero.com)); Provencal, Chris  
**Cc:** Pat Smith ([psmith@dartaero.com](mailto:psmith@dartaero.com))  
**Subject:** 350 crosstubes

Not sure who direct these ones to:

- 1) We will be finished drilling the last crosstubes shortly, these 7 & 7 will ship today for heat treating. Do we wait before drilling the balance until we receive the first shipment back, or continue on drilling? We probably won't see these first ones back for a couple of weeks, but I'd like to make sure we don't wait until the last minute.
- 2) We currently have 44pcs of D6015-125 in stock, this extrusion does both the fwd and aft 350 crosstubes. We also still have 38pcs of D6018-125, which does the aft 350 crosstubes. Should we place an order now to order more D6015-125? Can we use up the balance of the D6018-125's until depleted for all the next afts and use the D6015-125 for the fws only?

Thank You,  
Linda Lacelle  
Production Manager  
Dart Aerospace Ltd  
Hawkesbury, ON  
Phone: 613 632 9577  
Fax: 613 632 1053  
Cell: 613 676 1655



1000 E. Mermaid La., Wyndmoor (Phila.) PA 19038-8093  
Tel. (215) 233-2600 Fax (215) 233-5653

## Certification

### SOLD TO

Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7

June 5, 2012

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<b>Metlab Shop Order No:</b>	72197
<b>Purchase Order:</b>	16899
<b>Description:</b>	Crosstube
<b>Part No.:</b>	D350-748-141TRN, D350-748-241TRN
<b>Quantity:</b>	7 and 4 Pieces, Respectively
<b>Weight:</b>	500 Pounds
<b>Material:</b>	4130 Alloy Steel
<b>Specifications:</b>	Heat Treat to Minimum 180 KSI (MIL-T-6736OR AMS 2759-IC)
<b>Note:</b>	Need HRC 40 - 45

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This is to certify that the above parts were processed as indicated above and conform to the specification requirements.

### Results:

HRC 45 (218 KSI Tensile Strength, Converted)

METLAB

Quality Representative

Mark Podob

MERCURY CONTAMINATION: During the heat treating process, testing and inspections, the product did not come in direct contact with mercury or any of its compounds nor with any mercury containing device.



Heat Treating and Metallurgical Consulting